

Remarks

Claims 1-22 were previously pending in the subject application. By this amendment, the applicants have amended claims 1, 2, and 7-9. Also, claims 6 and 10-22 have been cancelled as being drawn to non-elected subject matter. No new subject matter has been added by this amendment. Support for these amendments can be found throughout the specification and original claims. Specifically, support can be found on page 5, lines 24-31; page 7, line 19; Tables 1-2; and page 13, lines 12-20. Accordingly, claims 1-5 and 7-9 are now before the Examiner for consideration.

The amendments set forth herein should not be interpreted to indicate that the applicants have agreed with, or acquiesced to, the rejections set forth in the outstanding Office Action. Favorable consideration of the claims now presented, in view of the remarks and amendment set forth herein, is earnestly solicited.

As an initial matter, the applicants affirm the telephonic election of Group I (Claims 1-5 and 7-9) drawn to a method for reducing fouling and a composition for reducing fouling. Also, attached is an executed Declaration and Power of Attorney for the third named inventor of the subject invention. The applicants aver that this Declaration and Power of Attorney is in compliance with 37 CFR 1.67(a) and respectfully request its entry into the record.

Claims 1, 3 and 5 have been rejected under 35 U.S.C. §102(b) as being anticipated by Taylor (U.S. Patent No. 5,989,323). The applicants respectfully traverse this ground of rejection because the '323 patent does not teach each and every element of the claims as now presented. The '323 patent uses compounds obtained from a variety of marine plants and animals. It fails to teach or suggest the particular class of compounds used in the methods of the current invention. Accordingly, the applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. §102(b) rejection over the '323 patent.

Claims 1 and 3-5 have been rejected under 35 U.S.C. §102(b) as being anticipated by Cook (U.S. Patent No. 5,945,171). The applicants respectfully traverse this ground of rejection because the '171 patent fails to teach methods applying compounds containing two cyclic structures to a substrate. The '171 patent teaches a metallic, marine surface coating made from copper and nickel. Accordingly, the applicants respectfully request reconsideration and withdrawal of this aspect of the

anticipation rejection.

Claims 1 and 3 have been rejected under 35 U.S.C. §102(b) as being anticipated by Taylor (U.S. Patent No. 5,695,552). The applicants traverse this ground of rejection because the '552 patent does not teach every element of the current invention. The applicants note that the '552 patent is a continuation-in-part of the '323 patent discussed above. Like its parent, the '552 discloses antifouling compounds extracted from marine life. The structures of these extracts are not disclosed and there is no indication that these structures contain two cyclic structures. Nor does it teach that the compounds need a double bond attaching a carbon atom and a nitrogen atom. Since it fails to teach all of the elements in claim 1, the applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. §102(b) based on the '323 patent.

Claims 1 and 3 have been rejected under 35 U.S.C. §102(b) as being anticipated by Fears (U.S. Patent No. 5,358,749). The applicants respectfully traverse this §102(b) rejection. The '749 patent teaches an anti-fouling surface application of cement, sand, a plasticizing agent, and antifouling agents like copper, organotin, zinc, individually or in combination. The '749 patent fails to teach or suggest the particular class of antifouling compounds utilized in the methods of the subject invention. Accordingly, the applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. §102(b) for the '749 patent.

Claims 1, 3 and 4 have been rejected under 35 U.S.C. §102(b) as being anticipated by Ghosh *et al.* (U.S. Patent No. 6,221,374). The '374 patent teaches surface coatings containing a polyphenol compound and a biologically active agent in an organic solvent. The composition is designed to slowly release the biologically active agent, and the agent may be selected from various microbicides, known marine antifouling agents, fungicides, and herbicides. The agents, which are listed on column 3, lines 30-50 of the '374 patent, do not teach the cyclic compounds used in the methods of the subject invention. Accordingly, the applicants respectfully request reconsideration and withdrawal of this aspect of the 35 U.S.C. §102(b) rejection.

Claims 1, 3 and 4 have been rejected under 35 U.S.C. §102(b) as being anticipated by Japanese Patent Specification No. 5-65433. The applicants respectfully traverse this rejection because the '433 specification fails to teach each and every element of the claimed invention.

Although the '433 specification teaches a broad list of possible antifouling agents (See, e.g., paragraph [0013]), none of these fall within the scope of claim 1. Specifically, none of these compounds contain two cyclic structures where the first cyclic structure contains a carbon atom attached to a nitrogen atom with a double bond and a second cyclic structure attached to the first at its 2 position. Thus, the applicants respectfully request reconsideration and withdrawal of this aspect of the rejection under 35 U.S.C. §102(b).

Claim 4 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Taylor (U.S. Patent No. 5,989,323). The applicants respectfully traverse this ground of rejection because the cited reference fails to suggest the particular class of compounds used as inhibitors in the methods of the claimed methods.

As the Examiner is aware, it is well established in patent law that in order to support a *prima facie* case of obviousness, a person of ordinary skill in the art must find both the suggestion of the claimed invention, and a reasonable expectation of success in making that invention, solely in light of the teachings of the prior art. *In re Dow Chemical Co.*, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988).

As noted above, the '323 patent pertains to antifouling compounds obtained from various species of marine life. All of the repellents disclosed in the '323 patent were extracted from plants or animals whose natural environment is aquatic. In contrast, the claimed methods of the current invention utilize compounds that are synthetically prepared or alkaloids (or their analogs) obtained from land-based plants. The '323 patent contains no suggestion that would motivate the skilled artisan to experiment with compounds not naturally found within sea life. Accordingly, the applicants respectfully request reconsideration and withdrawal of this aspect of the 35 U.S.C. §103(a) rejection.

Claims 4 and 5 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Taylor (U.S. Patent No. 5,695,552). The applicants respectfully traverse this ground of rejection because the cited reference fails to suggest the particular class of compounds used as inhibitors in the methods of the claimed methods.

As noted above, the '323 patent pertains to antifouling compounds obtained from various species of marine life. All of the repellents disclosed in the '522 patent were extracted from plants

or animals whose natural environment is aquatic. In contrast, the claimed methods of the current invention are related to compounds that are synthetically prepared or as alkaloids (and their analogs) derived from land-based plants. The '522 patent contains no suggestion that would motivate the skilled artisan to experiment with compounds not found naturally within sea life. Accordingly, the applicants respectfully request reconsideration and withdrawal of this aspect of the 35 U.S.C. §103(a) rejection.

Claims 4 and 5 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Fears (U.S. Patent No. 5,358,749). The applicants respectfully traverse this ground of the rejection because it fails to teach the class of compounds used in the methods of the claimed invention. The antifouling compounds of the '749 patent all contain metal components. There is no motivation to modify the disclosed compounds to arrive at the nitrogen containing compounds of the subject invention. Accordingly, the applicants respectfully request the reconsideration and withdrawal of this aspect of the rejection over the '749 patent.

Claims 5 and 7-9 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Ghosh *et al.* (U.S. Patent No. 6,221,374). The '374 patent teaches that surface coatings containing a polyphenol compound and a biologically active agent in an organic solvent. The composition is designed to slowly release the biologically active agent, and the agent may be selected from various microbicides, known marine antifouling agents, fungicides, and herbicides. The marine agents, which are listed on column 3, lines 30-50 of the '374 patent, do not even suggest the compounds with a carbon, nitrogen, carbon chain used in the methods of the application. Accordingly, the applicants respectfully request reconsideration and withdrawal of this aspect of the 35 U.S.C. §103(a) rejection.

Claims 2, 5 and 7-9 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Japanese Patent Specification No. 5-65433. The applicants respectfully traverse this ground of rejection because there is no teaching in the cited reference or in the subject application that nicotine and the compounds listed in claim 2 are equivalent. The original disclosure of a single compound that can function in the methods of the subject invention fails to support a rationale supporting an obvious rejection for all the compounds listed in claims 2 and 8. As noted by the CCPA, "it is no

longer possible to indulge in a presumption that the members of a Markush group are recognized by anyone to be equivalents except as they 'possess at least one property in common which is mainly responsible for their function in the claimed relationship.' *In re Ruff*, 256 F.2d 590, 599 (C.C.P.A. 1958) (quoting from MPEP 706.03(y); 1953 rev.). See also MPEP §2144.06.

The applicants respectfully point out that nicotine does not even fall within the scope of the compounds used in the claimed methods and compositions of the current invention. Although nicotine does have a pyridyl group, its other cyclic structure does not have a carbon and nitrogen double bond. The cited reference fails to teach or suggest the structural components of nicotine that cause it to repel aquatic organisms. It certainly contains no teachings or suggestions that would motivate the skilled artisan to explore methods and compositions containing compounds with nitrogen bound in their cyclic structures. Since the cited reference fails to teach any equivalence between nicotine and the class of compounds named in the current invention, the applicants respectfully submit that the '433 specification does not render obvious the subject invention under 35 U.S.C. §103(a).

Furthermore, the applicants own teachings in the subject application do not disclose any equivalence between nicotine and the class of compounds used in the claimed methods and compositions. It merely names nicotine as a useful compound. Without an actual teaching of the common structures and features between nicotine and the compounds used in the methods and compositions, the applicants respectfully aver that its own application is not available to establish equivalence to maintain a rejection under 35 U.S.C. §103(a).

Additionally, the applicants traverse this ground of rejection because the '433's coating composition must contain synergistic combinations of repellents and salts that remain active even if dried. The '433 specification's own teachings provide that not every known repellent can be used in a dried composition. The applicants point out that there is no suggestion that the compounds used in the methods and compositions of the current invention could also maintain activity. Accordingly, the applicants respectfully request reconsideration and withdrawal of this aspect of the rejection under 35 U.S.C. §103(a).

Claims 1-5 and 7-9 have been rejected under 35 U.S.C. §103(a) as being unpatentable over

Japanese Patent Specification No. 51-63835. The applicants traverse this ground of rejection because the '385 specification fails to teach the claimed methods and compositions. The '835 merely discusses nicotine extracted from tobacco leaves (S-nicotine). There is no teaching or suggestion of compounds comprising two cyclic structures where a nitrogen-carbon double bond is contained in one of the structures and where the other cyclic structure is a pyridyl group. Furthermore, the mere listing of S-nicotine in the Markush group of claims 2 and 8 fails to establish the obviousness of each compound listed therein. As noted above, there must be a teaching of the equivalence between the disclosed compound and the remainder of the compounds, but the '835 specification only focuses on the form of nicotine that is extracted from tobacco leaves. It fails to give any guidance to the skilled artisan that would motivate him or her to explore the usefulness of the compounds disclosed in the methods and compositions of the claimed invention. Accordingly, the applicants respectfully request reconsideration and withdrawal of this aspect of the rejection under 35 U.S.C. §103(a).

Claims 1-5 and 7-9 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Japanese Patent Specification No. 04-337369. The applicants respectfully traverse this ground of the rejection. First, the applicants respectfully point out that the cited reference fails to suggest that anti-fouling compounds must contain a heterocyclic structure with nitrogen double bonded to carbon. Although the '369 names numerous compounds, it fails to teach any commonality among its anti-fouling compounds that could help the skilled artisan to determine other useful structures. Thus, there is no teaching or suggestion regarding the structure of the compounds themselves that would motivate the skilled artisan to investigate the compounds used in the methods and compositions of the claimed invention. Second, although the applicants recognize that nicotine is listed as one possible component of the '369 coating, the cited reference fails to teach the equivalence between nicotine and the class of compounds utilized in the current invention.

Third, the applicants point out that an essential component of the '369 coatings is polyvinyl alcohol. The purpose of the polyvinyl alcohol, as disclosed in paragraphs [0018] and [0019] of the '369 specification, is to increase the effectiveness of the repellent within the coating. The Federal Circuit has held that where the proposed modification would render the cited apparatus "inoperable for its intended purpose[,] then the cited reference would lack motivation to perform the proposed

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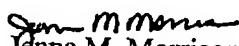
modification. *In re Gordon*, 221 USPQ 1125,1127 (Fed. Cir. 1984). In this particular situation, the applicants submit that modifying the '369 coatings by removing the polyvinyl alcohol component would frustrate the purpose the coatings. Without the alcohol, the efficiency of the coating would decrease to an extent that the skilled artisan would lack motivation to remove this essential ingredient. Accordingly, the applicants respectfully request reconsideration and withdrawal of this aspect of the 35 U.S.C. §103(a) rejection.

In view of the foregoing remarks and amendment, the applicants believe that the currently pending claims are in condition for allowance, and such action is respectfully requested.

The Commissioner is hereby authorized to charge any fees under 37 CFR §§1.16 or 1.17 as required by this paper to Deposit Account No. 19-0065.

The applicants also invite the Examiner to call the undersigned if clarification is needed on any of this response, or if the Examiner believes a telephone interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,


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Attachments: Executed Declaration and Power of Attorney for Dan. Rittschof

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